



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,301	02/23/2006	Jeffrey M. Cogen	63376AUS	4545
35503	7590	11/09/2007		
UNION CARBIDE CHEMICALS AND PLASTICS TECHNOLOGY CORPORATION P.O. BOX 1967 MIDLAND, MI 48641-1967			EXAMINER	
			LEE, RIP A	
		ART UNIT	PAPER NUMBER	
		1796		
		MAIL DATE	DELIVERY MODE	
		11/09/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/569,301	COGEN ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Rip A. Lee	1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-4,6,7,11,12,14,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4,6,7,11,12,14,22 and 23 is/are rejected.
- 7) Claim(s) 1, 4, 6, 11, 12 and 22 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_.

## **DETAILED ACTION**

### *Claim Objections*

1. Claims 1, 11, 12, and 22 are objected to because of the following informalities: It is not clear how an aliphatic diacid anhydride may be unsaturated. Appropriate correction is required.
2. Claims 4 and 6 are objected to because of the following informalities: Please replace “being” with “is.” Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-4, 6, 7, 11, 12, 14, 22, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 3, 11, 12, 14, and 22 recite a “density less than about” 0.95, 0.92, or 0.90, a melting point “above about 90 °C,” a polydispersity index of “less than about 3” and a LOI of “at least about 37.” Use of these terms renders that claims indefinite because it is not clear where the upper and lower bounds of these ranges lie exactly. Dependent claims are subsumed under the rejection.
5. Claims 1-4, 6, 7, 11, 12, 14, 22, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term “ultra high molecular weight polysiloxane” is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the molecular weight, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Art Unit: 1796

6. Claims 12 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is encompassed by the term "communication media." The examiner has turned to the specification for guidance, and apart from the term "wire" and "cable," there is no indication what Applicant intends to encompass by the description "communication media."

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1796

10. Claims 1, 2, 4, 6, 7, 12, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith *et al.* (U.S. 5,218,027).

Smith *et al.* teaches a fire-retardant thermoplastic composition containing an ethylene-(meth)acrylic copolymer, an organopolysiloxane having a viscosity of up to  $300 \times 10^6$  cP (*i.e.*, 100,000-900,000 cP), aluminum trihydrate/magnesium dehydrate flame retardant, and one further resin that is an ethylene-propylene copolymer grafted with maleic anhydride (claims 1-5, 8, 12). From the working examples, one finds that the maleic anhydride grafted ethylene-propylene copolymer is commercially available as Primcor 3330 ( $d = 0.932$ ) and 3460 ( $d = 0.938$ ). Inventive compositions are used for wire insulation (col. 3, line 34).

11. Claims 3, 11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith *et al.* in view of Jow *et al.* (U.S. 5,288,785).

The discussion of the disclosures of the prior art from the previous paragraph of this office action is incorporated here by reference. Smith *et al.* provides some examples of grafted copolymer for use in compositions, but there is no stringent requirement, other than the grafted polymer contains maleic anhydride. The inventors teach that maleic anhydride, used with polyethylene, polypropylene, and EVA, increases flame retardancy because it produces an intumescent foam or char during combustion.

Jow *et al.* teaches cable insulation compositions in which the grafted polyolefin component is linear polyethylene having a density of  $0.915 \text{ g/cm}^3$ . One having ordinary skill in the art, absent any showing of criticality or unexpected results, would have found it obvious to use the grafted polymer of Jow *et al.* in flame retardant compositions of Smith *et al.*, and since this contains maleic anhydride functionality, one of ordinary skill in the art would have expected to make an insulation having increased flame retardancy. The combination of teachings is obvious because both relate to flame retardant compositions. With regard to the property recited in claim 11, a reasonable basis exists to believe that the composition of Smith *et al.*, as modified by Jow *et al.*, exhibits substantially the same properties, especially in light of the fact that the composition is substantially the same as that described in the instant claims. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness

Art Unit: 1796

difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

12. Claims 1-4, 6, 7, 11, 12, 14, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hall (U.S. 6,025,422) in view of Jow *et al.*

Hall discloses a flame retardant cable insulation composition comprising hydrated inorganic filler, a blend of an aliphatic polyketone and a copolymer of ethylene and ethylenically unsaturated polar monomer (claims 1-4), and an ethylene/C<sub>4</sub>-C<sub>8</sub> alpha olefin copolymer having a density of about 0.87-0.93 g/cm<sup>3</sup> (claims 7-9). The third component is commercially available as Exacct SLX, which is a metallocene LLDPE with a density of 0.909 g/cm<sup>3</sup> (col. 10, lines 5-8). The inorganic filler is magnesium dehydrate or aluminum trihydrate (claim 11). Compositions also include a silicone processing aid (claims 12 and 13), which is an ultra high molecular weight polydimethylsiloxane dispersed on silica (col. 9, lines 61-63). According to the inventors, compositions may include a coupling agent that is an olefinic copolymer having highly polar functional groups such as maleic anhydride (col. 6, lines 53-60). Hall does not provide further information of this material.

Jow *et al.* teaches cable insulation compositions in which the grafted polyolefin component is linear polyethylene having a density of 0.915 g/cm<sup>3</sup>. Since Hall contemplates use of olefinic copolymer containing maleic anhydride groups, one having ordinary skill in the art, absent any showing of criticality or unexpected results, would have found it obvious to use the grafted polymer of Jow *et al.* in flame retardant compositions of Hall. One of ordinary skill in the art would have been especially motivated to use the grafted polyolefin of Jow *et al.* because it serves as coupling agent for the inorganic hydrate filler and because it confers flame retardancy due to the presence of maleic anhydride functionality. The combination of teachings is obvious because both relate to flame retardant compositions. With regard to the property recited in claim 11, a reasonable basis exists to believe that the composition of Hall, as modified by Jow *et al.*, exhibits substantially the same properties, especially in light of the fact that the composition is substantially the same as that described in the instant claims. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In*

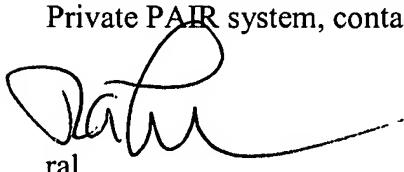
Art Unit: 1796

*re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



ral

November 4, 2007